

**BEFORE
THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA
DOCKET NO. 2019-185-E**

IN RE: South Carolina Energy Freedom Act)
(H.3659) Proceeding to Establish Duke)
Energy Carolinas, LLC's Standard Offer,)
Avoided Cost Methodologies, Form)
Contract Power Purchase Agreements,) **DIRECT TESTIMONY OF JON**
Commitment to Sell Forms, and Any) **DOWNEY ON BEHALF OF SOUTH**
Other Terms or Conditions Necessary) **CAROLINA SOLAR BUSINESS**
(Includes Small Power Producers as) **ALLIANCE**
Defined in 16 United States Code 796, as)
Amended) - S.C. Code Ann. Section 58-)
41-20(A))
)

I. INTRODUCTION AND PURPOSE OF TESTIMONY

Q. Please state your name and business address.

A. My name is Jon Downey, and my business address is 1519 King Street Extension, Charleston, SC 29405.

Q. Please provide your educational background.

A. I have a Bachelor's degree from Duke University and an MBA from Columbia Business School

Q. Please describe your work and professional experience.

A. I currently serve as the President and CEO of Southern Current where I oversee all sectors of the Company's business – residential, commercial and industrial, and utility-scale development and engineering, procurement, and construction (EPC). Prior to joining Southern Current, I spent 20 years in senior management positions for rapidly growing, technology-centric businesses. Included in this experience are terms as COO and CFO at Queensboro, Vice President of Operations at Red Ventures, and Vice President of Product Management at TSI.

Q. Have you previously appeared in a proceeding before the South Carolina Public Service Commission?

A. No.

Q. What is the purpose of your testimony?

A. As a business owner and the CEO of a successful energy company, my testimony is intended to provide this Commission with additional insight into the economic

development perspective of companies like Southern Current, including the operational processes, risks, and underlying regulatory and policy frameworks that support increased competition in electric generation. In addition, I explain how businesses like ours help to elevate South Carolina's economic competitiveness and deliver value to ratepayers by reducing risk and increasing stability in electricity rates.

Q. How is your testimony organized?

A. I begin by providing an overview of Southern Current and the Company's investment portfolio of solar assets. I then outline the steps and investments necessary to bring a solar project to the point of executing a power purchase agreement ("PPA"), including the financial risks assumed by solar developers. I go on to contrast this with the risks borne by ratepayers under the traditional cost of service utility business model. Finally, I explain the importance of federal and state policies like PURPA and Act 62 for enabling effective competition in monopsony energy markets like South Carolina, as well as the spectrum of benefits that flow from that competition to the state's businesses and citizens.

Q. Can you provide an overview of Southern Current?

A. Southern Current is a solar energy developer, contractor and service provider to the residential, commercial and industrial, and large-scale power production sectors. The customers we serve in South Carolina include single-family homeowners, small to large size businesses, and utilities. The company's current footprint spans ten states with plans to grow into five additional state markets over the next two years. To date, our development portfolio includes over 800 megawatts spanning approximately 141 assets with more than \$1 billion in solar assets sold. In South Carolina we have over 700

1 residential customers with 160 of those originating in 2019. Since 2017, the SC
2 Department of Commerce has announced over \$800 million of planned investment by
3 Southern Current to construct nearly 700 megawatts of new solar facilities. We currently
4 employ over 100 full-time employees here in South Carolina and continue to grow our
5 workforce as state markets like South Carolina begin to foster additional investment
6 opportunities through increased competition. We currently have a total project pipeline of
7 over 3 gigawatts. Southern Current is committed to delivering value to customers, both
8 direct and indirect, while promoting a professional culture of safety, quality, creative
9 thinking, and industry leadership.

10 **Q. Can you elaborate on the steps required for developing a utility scale solar project?**

11 **A.** Yes, below I've included two info-graphics that illustrate our development process, as well
12 a narrative summary of that process.

Fig. 1

Figure 1 summarizes the eight general phases of the project development process, which may overlap with one another and not occur entirely in sequential order:

1. **Regulatory Assessment and Engagement:** Prior to commencing project origination in a given market, Southern Current evaluates market conditions and opportunities, including the regulatory and policy landscape, to ensure a viable path forward exists for solar project development.
2. **Land Entitlement:** Once favorable market conditions have been identified, our real estate development and acquisitions teams begin evaluating potential development sites based on land characteristics, property owner interest, and accessibility to the electric grid. Lease options are then negotiated with property owners for potential development of a solar farm.

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- 1 3. Transmission and Distribution Interconnection: Individual projects are then formally
2 entered into a utility's interconnection process to determine project viability and the
3 extent of investment in network upgrades and interconnection facilities required to
4 interconnect the project.
 - 5 4. Permitting: A comprehensive process is undertaken for identifying project impacts,
6 both social and environmental, and to obtain all needed permits for project
7 construction, such as building, wetlands and zoning permits.
 - 8 5. Offtake: Within the context of the existing market structure (PURPA, competitive
9 solicitation, etc.), Southern Current engages in the proper steps necessary to enter into
10 a power purchase agreement with the offtake entity, which will necessarily be an
11 electric utility in monopsony markets like South Carolina where utility commissions
12 act as a backstop for ensuring contract terms and conditions are commercially
13 reasonable.
 - 14 6. Design: Southern Current's team of professional engineers designs and configures the
15 project to conform to all required permitting and interconnection standards with a focus
16 on project performance, efficiency, and reliability.
 - 17 7. Procurement: Southern Current typically procures all of the hardware associated with
18 construction of the solar facility, including modules, inverters and trackers. These
19 components are procured from a broad range of domestic and international suppliers
20 and manufacturers and must meet industry standards for performance and reliability.
 - 21 8. Construction: For projects constructed by Southern Current, our company typically
22 manages all related engineering, procurement and construction details, including
23 scheduling, bonding, and management of subcontractors to ensure the project comes in

at or under budget and is capable of meeting the performance requirements included in the power purchase and interconnection agreements.

Fig. 2



Figure 2 depicts the following “Gates” in the project development process (*i.e.*, the points at which Southern Current generally must decide whether to terminate a project or make significant additional investments).

Gate 1: Project origination is a 12 – 18 month process, which includes market evaluation, land assessment, landowner engagement, projecting planning and budgeting, permitting considerations, and engineering for the initial interconnection submission.

Gate 2: Underwriting requires an additional 6 – 9 months to perform due diligence related to land and facility permitting, local tax arrangements, landowner coordination, site analysis, and social and environmental impact analyses.

Gate 3: Pre-sale activities occur over a 6 – 9 month period. This process entails completion of site surveys, updated project estimates, execution of the interconnection agreement and PPA, and final civil engineering work. At the end of this stage the project can proceed to construction.

Gate 4: Upon receipt of the notice to proceed and establishment of the commercial operation date, another period of up to 6 months is required for placing the asset in service.

Q. What risks does Southern Current take on in developing these projects?

A. Southern Current, like many solar developers, takes on substantial capital risk to develop and construct energy facilities. As a privately held company, we use a combination of internal capital and debt to develop and construct projects, in addition to arranging long-term financing and tax equity investment for a project's lifetime. Unlike a regulated utility, we develop projects with no guarantees that our costs will be recovered.

As outlined above in Fig. 2, there is a spectrum of investment risks taken by solar developers within the time and capital intensive process of bringing a typical project to the point where a PPA can be executed.

For an average South Carolina project, Southern Current incurs over \$15,000 per MW ac of nameplate capacity in development costs prior to executing a PPA. Taking a sample of late-stage development projects, Southern Current spends nearly \$161,000 per project before executing a contract with the utility to sell energy and capacity. In addition, Southern Current has spent, in the aggregate, over \$2.7 million on interconnection applications and related study fees (not including the actual cost of interconnection work). For the projects referenced herein, the capital risk assumed by Southern Current to compete

for viable business investment opportunities in South Carolina has equaled nearly \$12.5 million prior to PPA execution. Because we are only paid for power delivered to the grid, we take on all costs associated with financing, construction, project in-service deadlines and contract penalties, including guaranteed up-time delivery of power, all before the project is deemed completed. As noted above, since we don't have a captive customer base, any construction cost overruns, finance premiums, unforeseen maintenance issues and the like are all borne by Southern Current with no change to the price we are paid for power. Ultimately, solar developers like Southern Current knowingly take on these risks so that we have an opportunity to compete for electricity sales in this type of market.

Q. Is the interconnection process a source of substantial project risk?

A. Absolutely. The interconnection process adopted by this Commission and managed by the utility is intended to identify costs for interconnection facilities and any necessary network upgrades. Substantial investments by a solar developer have already been made prior to receiving interconnection cost estimates. Additionally, actual interconnection costs charged to a solar developer have been readjusted significantly upwards and invoiced to the project *after* completion of the project. Therefore, while it is within our power to mitigate most of the risks each project faces by sound planning and good decision-making, the interconnection process is primarily controlled by the interconnecting utility and there is often little we can do to mitigate those risks.

Q. Does the utility's purchasing energy and capacity from a Small Power Producer ("SPP") rather than building new generation reduce risk to ratepayers?

1 **A.** Yes. All project revenue paid to a solar developer is determined by the avoided cost rates
2 approved by this Commission, which are fixed in the PPA and are not subject to upward
3 adjustment for unforeseen costs associated with interconnection, permitting, construction,
4 maintenance and operations, regulatory requirements related to emissions and waste
5 management, or any other potential cost adders. By having the solar developer bear these
6 cost risks, ratepayers are shielded from escalating project costs that can accompany utility-
7 owned generation resources. Ultimately, the PURPA and Act 62 based development model
8 requires a solar developer to mitigate impacts to its profitability by properly managing
9 project development, as well as assuming the risk associated with final interconnection
10 costs, while also providing utility customers with the predictability that follows from fixed-
11 rate avoided cost contracts.

12 **Q.** **Why is proper implementation of Act 62 and PURPA important to the SCSBA and**
13 **Southern Current?**

14 **A.** Not only is competition the engine that drives innovation and job creation in the U.S.
15 economy, but it also creates opportunities to lower costs and provide choices to consumers.
16 In the wake of the V.C. Summer and Lee nuclear abandonments, Act 62 was passed
17 unanimously by the General Assembly with the benefits of competition and consumer
18 choice in mind. Proper implementation of Act 62 will do many things, but most
19 importantly, it will continue to expand a marketplace that historically has been limiting for
20 small power producers. The intent of PURPA in 1978 to allow for competition in
21 monopsony markets by small power producers is similar in many ways to the intent of Act
22 62. It was Congress's conclusion that allowing such competition would ultimately benefit
23 American utility ratepayers. While much has changed in this country's electricity sector

1 with the design of restructured markets like PJM, the Southwest Power Pool, and ERCOT,
2 South Carolina's cost of service regulatory regime is dominated by territorial monopolies
3 and has been slow to evolve towards a more competitive model.

4 Proper implementation of Act 62 and PURPA in South Carolina means businesses
5 like Southern Current have the opportunity to compete and that customers receive the
6 benefits of that competition.

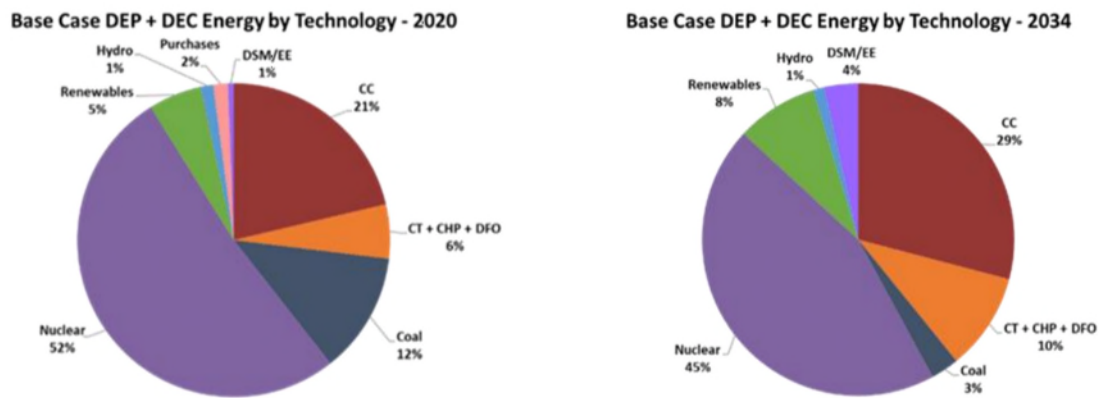
7 **Q. What benefits does the solar industry bring to South Carolina?**

8 **A.** The solar industry in South Carolina represents a market-based opportunity for delivering
9 benefits to ratepayers while expanding the positive economic development impact our
10 industry has on the state.

11 The cost of electricity in South Carolina continues to rise due to multiple factors,
12 including abandonment costs for new nuclear construction, continued operation of
13 uneconomic coal units, and the management of coal ash waste materials. As a resource,
14 solar is stable and predictable and represents a meaningful hedge against historically
15 volatile fuel prices. While natural gas prices currently enjoy historically low prices, recent
16 history and future projections indicate that this is temporary. The added regulatory risks
17 associated with a future price on carbon, coal ash storage and clean-up requirements, and
18 a tightening of fracking regulations suggests that volatility in fossil fuel markets is an
19 omnipresent reality. Under Act 62 PPAs with fixed long-term rates, the price for power
20 produced by a solar facility is known, unlike under most agreements with generating
21 resources that rely on a fuel input that is inherently unpredictable. And while it is critical
22 to have a diverse resource mix, it is equally important to have a diversity of fixed vs

variable input costs to generation that supports more predictable energy rates to consumers. As evidenced by Duke's 2019 integrated resource plans, expansion of solar resources remains significantly underrepresented within the company's overall energy mix. Over the company's 15-year planning horizon, renewable energy increases from 5% to 8% in meeting the company's energy requirements while fossil fuel resources increase from 39% to 42%.

Fig.3 DEC and DEP Energy by Technology Projections, 2019 Integrated Resource Plans¹



In recent years, South Carolina has experienced the realities and consequences of long-term maintenance and environmental clean-up costs related to older and fossil-based generation, in addition to costs of project abandonment. Much of these costs are often passed on directly to customers but were never fully considered and accounted for when these projects were approved by regulators. By comparison, independent ownership of

¹ Catherine Morehouse, *Duke Updated IRP Projects Around 2.2 GW Load Growth, Met With New Natural Gas*, UTILITYDIVE (Sept. 6, 2019), <https://www.utilitydive.com/news/duke-updated-irp-projects-around-22-gw-load-growth-met-with-new-natural-g/562388/>.

1 generation, and specifically solar, places the costs of items like decommissioning,
2 abandonment, and environmental clean-up on the SPP and not on the ratepayer.

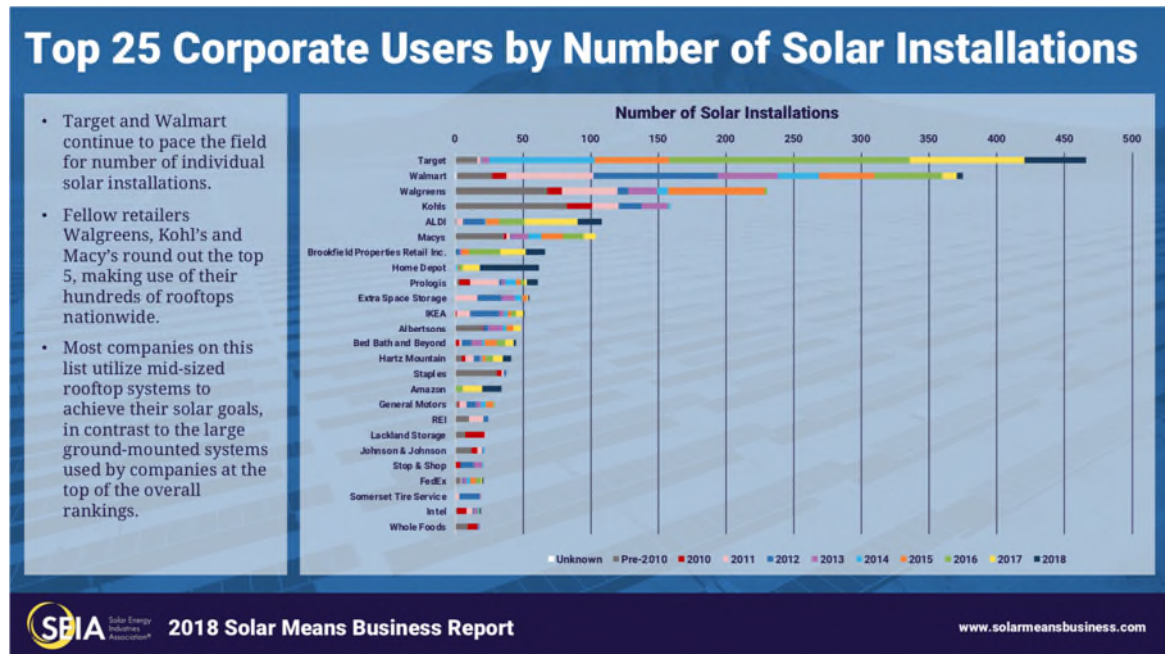
3 In addition to the predictable, low-cost power that solar provides to the grid, large-
4 scale solar investments provide substantial local and state tax revenue. Since 2015, the
5 South Carolina Department of Commerce, through press releases, has announced nearly
6 \$2.2 billion of new capital investment agreements for large-scale solar facilities across 21
7 counties with 15 different companies, extending the positive local impact of solar well
8 beyond lower energy costs to ratepayers.

9 South Carolina is also known for its strong manufacturing base and is home to a
10 diversity of national and international companies. Increasingly, large commercial and
11 industrial customers demand the opportunity to purchase renewable energy to both meet
12 corporate sustainability goals and reduce operating expenses. According to a recent report
13 by the Solar Energy Industries Association (SEIA), corporate solar procurement is 23 times
14 larger today than it was a decade ago with more than 7 gigawatts (GW) across 35,000
15 installations. Year 2018 represented the second-largest year for commercial installations
16 in the U.S. with companies like Amazon, Target, Walmart, Google, Fifth Third Bank,
17 Costco, Starbucks, Home Depot and Lockheed Martin all making up part of the top 25
18 corporate users of solar capacity. As this trend continues, renewable energy will
19 increasingly become a tool for economic development and retaining and attracting business
20 to the state.² Act 62 recognized this trend when requiring utilities to file Voluntary

² See, Solar Energy Indus. Ass'n., *Solar Means Business: Tracking Solar Adoption by America's Top Brands*, 8 (July 2019), *available at* <https://www.seia.org/solar-means-business-report-archives> (then follow "Solar Means Business 2018" hyperlink).

Renewable Energy Programs with this Commission that are designed to provide increased access to renewable energy from commercial and industrial customers across the state.

Fig. 4



Creating meaningful opportunities for increased solar generation in South Carolina is a high priority not only for SPPs and commercial and industrial customers, but also for voters. A recent poll conducted by WPA Intelligence for the not for profit group Conservatives for Clean Energy found that eight out of ten (80%) of those polled support the development of clean energy in South Carolina. Seven out of ten (69%) expect that an increase in our use of clean and renewable energy sources in South Carolina, such as wind and solar, will create jobs and encourage economic development.³

³ Conservatives for CleanEnergy, South Carolina Clean Energy Survey, 13 (March 11-13, 2019), https://www.cleanenergyconservatives.com/wp-content/uploads/2019/02/SC_CCE_3.26.19-Final.pdf.

1 Finally, Southern Current is a large employer, taxpayer, and utility customer
2 headquartered in South Carolina that has a vested interest in the energy future of this state
3 independent of our solar business model. Like all businesses, we want access to
4 predictable, low-cost and reliable electricity; we want South Carolina to promote
5 environmentally sound and socially responsible policies; and we want the state to thrive
6 economically in the 21st century. We believe Southern Current and the solar industry play
7 an instrumental role in preserving and enhancing all that makes South Carolina the great
8 state that it is today.

9 **Q. Does this conclude your testimony.**

10 **A. Yes, it does.**